

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-16 are now present in this application. Claims 1, 5, 9 and 13 are independent.

Amendments have been made to the, Abstract of the Disclosure and specification, claims 5-16 have been added, and claims 1-4 have been amended. Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Although the Examiner has acknowledged Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document, it is respectfully submitted that the certified copy of the priority document has not been previously submitted. The required certified copy is, however, being submitted concurrently herewith. It is respectfully requested that the Examiner confirm receipt of the attached certified copy in the next action.

Drawings

Applicants have not received a Notice of Draftsperson's Patent Drawing Review PTO-948 or other indication of whether or not the formal drawings have

been approved by the Draftsperson. Clarification in the next Office Action is respectfully requested.

Drawings Corrections

Applicants are concurrently submitting Proposed Drawing Corrections for the Examiner's approval, making minor revisions to Figures 3 and 10. Approval of the proposed drawing corrections is respectfully requested.

Abstract of the Disclosure

Applicants have amended the Abstract of the Disclosure in order to place it in better form.

Specification Amendments

Applicants have amended the specification in order to place the specification in better form.

Substitute Specification

In accordance with MPEP §608.01(q), Applicants herewith submit a substitute specification in the above-identified application. Also included is a marked-up copy of the original specification, which shows the portions of the

original specification, which are being added and deleted. Applicants respectfully submit that the substitute specification includes no new matter and that the substitute specification includes the same changes as are indicated in the marked-up copy of the original specification showing additions and deletions.

Because the number of amendments which are being made to the original specification would render it difficult to consider the case, or to arrange the papers for printing or copying, Applicants have voluntarily submitted this substitute specification. Accordingly, Applicants respectfully request that the substitute specification be entered into the application.

Rejection Under 35 U.S.C. § 102

Claims 1 and 4 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,088,079 to Kameyama et al. (Kameyama). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

With regard to independent claim 1, Kameyama appears to disclose a CLC layer 1 disposed upon a surface of a prism array layer 5 (see Fig. 8 of Kameyama). The prism layer 5 is disposed between the surface of a light conductive plate 4 and CLC layer 1. While the CLC layer appears to be over the conductive plate 4, the presence of the prism layer 5 prevents the CLC layer from

being arranged on the actual surface of the conductive plate 4. Therefore the rejection of independent claim 1 under 35 U.S.C. 102 is not proper. Particularly, Kameyama fails to disclose at least one single layer cholesteric liquid crystal (CLC) film arranged on the front surface of the light wave guide plate, as recited in independent claim 1, as amended.

Claim 4 depends from independent claim 1, and therefore is patentable at least for the reasons stated with respect to independent claim 1. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Rejections under 35 U.S.C. § 103

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kameyama in view of U.S. Patent No. 5,691,789 to Li et al. (Li), and claim 3 stands rejected under 35 U.S.C. § 103(a) over Kameyama in view of U.S. Patent No. 6,377,325 to Faris et al. (Faris). These rejections are respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

With regard to claim 2, a single layer CLC is explicitly recited therein. The single layer CLC is recited as being either a right-handed CLC layer or a left-handed CLC layer. By contrast, Li discloses a broadband circular polarizer that reflects circularly polarized light which is either left-handed or right-handed

depending on the final spiral structure of the materials utilized. That is, a single CLC is not designated as being one of either right-handed or left-handed (one or the other, but not both), and therefore cannot anticipate Applicants' claimed invention. Further, the single CLC of Li is adapted to reflect left or right-hand circular polarized light, making it universal (due to the broad band) as opposed to right-handed, or left-handed.

Similarly, Faris discloses broadband CLC layers. Each of the layers of Faris, like those in Li, are capable of reflecting both right-handed and left-handed circularly polarized light (see Faris, Col.2, lines 57-61).

Kameyama, argued above with respect to independent claim 1, fails to disclose at least one single layer cholesteric liquid crystal (CLC) film arranged on the front surface of the light wave guide plate. While it is clear that neither Li, nor Faris can fill this vacancy, these two references also fail to disclose or suggest a CLC layer designated as being one of either right or left-handed.

For at least the reasons set for above, Kameyama in view of Li cannot render claim 2 obvious to one of ordinary skill in the art, and Kameyama in view of Faris cannot render claim 3 obvious to one of ordinary skill in the art. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claims 5-16

Claims 5-16 have been added for the Examiner's consideration.

Independent claim 5 recites a combination of elements in a back light device for a liquid crystal display device, including a plurality of single layer cholesteric liquid crystal (CLC) films arranged over the front surface of the light wave guide plate, collimating light wherein the at least one CLC film selectively reflects vertically incident light with a wavelength of more than 600 nm. Applicants respectfully submit that this combination of elements as set forth in independent claim 5 is not disclosed or made obvious by the prior art of record.

Independent claims 9 and 13 recite respective combinations of elements in a back light device for a liquid crystal display device. Each combination includes at least one cholesteric liquid crystal (CLC) film arranged on the emitting surface of the light wave guide plate. Applicants respectfully submit that these combinations of elements as set forth in independent claims 9 and 13 are not disclosed or made obvious by the prior art of record.

Applicants submit that claims 6-8, 10-12 and 14-16, either directly or indirectly, from independent claims 5, 9, and 13, and are therefore allowable based on their dependence from claims 5, 9, and 13, which are believed to be allowable.

Consideration and allowance of claims 5-16 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Percy L. Square, Registration No. 51,084, at (703) 205-8034, in the Washington, D.C. area.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit

Application No.: 09/657,506
Art Unit 2871

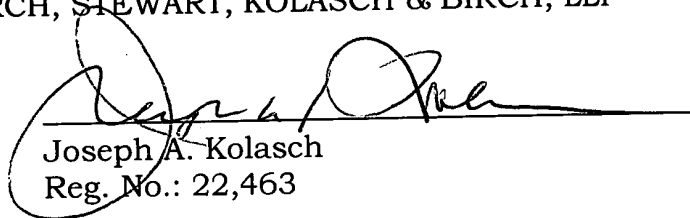
Attorney Docket No. 3430-0134P
Amendment filed May 12, 2003
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Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made
Abstract of the Disclosure
Substitute Specification w/Marked-Up Version

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Abstract of the Disclosure:

The Abstract of the Disclosure has been amended as follows:

--ABSTRACT OF THE DISCLOSURE

[The present invention discloses a back light] A backlight device for a liquid crystal display device[, including:] includes a light source providing light; a light waveguide plate 40 guiding light from the light source, having an emitting surface, a front surface and a bottom surface, the emitting surface adjacent to the light source; a reflector arranged under the bottom surface of the light wave guide plate, reflecting light; and at least one cholesteric liquid crystal (CLC) film arranged over the front surface of the light wave guide plate, collimating light.--

In the Specification:

A marked-up version of the substitute specification, showing the changes made, is attached hereto.

In the Claims:

The claims have been amended as follows:

1. (Amended) A back light device for a liquid crystal display device, comprising:

a light source providing light;

a light waveguide plate [40] guiding light from the light source, said light waveguide plate having an emitting surface, a front surface and a bottom surface, the emitting surface being adjacent to the light source;

a reflector arranged under the bottom surface of the light wave guide plate, reflecting light; and

at least one single layer cholesteric liquid crystal (CLC) film arranged [over] on the front surface of the light wave guide plate, collimating light.

2. (Amended) The back light device of claim 1, wherein the single layer CLC film [has one-layered structure of] is one of either a right handed [-] or a left handed CLC layer, the right [- and left] handed CLC layer selectively reflecting [a] right handed circularly polarized light [-] and [a] the left-handed CLC layer reflecting left-handed circularly polarized light[, respectively].

3. (Amended) The back light device of claim 1, wherein the at least one single layer CLC film has a dual-layered structure [of] having both a right [-] and a left handed CLC layer, the right [-] and left handed CLC layer selectively reflecting [a] right [-] and [a] left-handed circularly polarized light, respectively.

4. (Amended) The back light device of claim 1, further comprising [comprises] a prism sheet arranged between the at least one single layer CLC film and the front surface of the light wave guide plate.

Claims 5-16 have been added.